Bloodborne Pathogens/Infection Control
Tuberculosis Awareness

CDM 4th Year
May 30th 2017

Biological Safety Officer
Environmental Health and Safety
Training Outline

- Infection Control
- Bloodborne Pathogens
- Sharps Safety
- Environmental Surfaces
- Spills
- Personal Protective Equipment
- Hand Hygiene
- TB Transmission in Dentistry
Why Is Infection Control Important in Dentistry?

- Contact with blood, oral and respiratory secretions, and contaminated equipment can occur
- Both patients and dental health care personnel (DHCP) can be exposed to pathogens
- Proper procedures can prevent transmission of infections among patients and DHCP
Infection Control
First documented report of patient-to-patient transmission of hepatitis C virus associated with a dental setting in the United States

Improper sterilization techniques

Using single vials of medications on multiple patients

No written infection control protocol

COLUMBIA UNIVERSITY Environmental Health and Safety
Replacement dental technician noted improper sterilization techniques

Hundreds of patients require bloodborne pathogen testing

Dentist removed from clinical care
Accreditation visit in Sept. 2016

Formally “No recommendations” made by CODA accreditors – Congratulations!

However….. Areas of improvement were noted including infection control
Infection control compliance and outcome assessments rolled out in January 2017.

Potential disciplinary action, loss of clinic privileges:
- Hand hygiene
- Use of PPE
- Sharps Safety
- Safe Injection Practices
- Sterile instruments and devices
- Clean and disinfected environmental surfaces

Courageous conversations welcomed.
Did You Just Double Dip That Chip?

Warning Citation for Non-Compliance with CDM Policies and Procedures

Date: __________________________

To: __________________________

From: __________________________

You have been provided this warning citation because you violated a CUHC Policies and/or Procedures at CDM. Professionalism, patient safety and regulatory compliance are important components of your professional responsibilities at CDM. Repeated failure to comply with these policies and procedures will result in suspension of clinic privileges.

Description of violation:

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

__________________________________________  Signature of Violator

__________________________________________  Signature of Reporter

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www.ehs.columbia.edu
Infection Control: Standard Precautions

Apply to all patients regardless of actual or perceived risk factors; treat all blood or OPIM as if infectious

- Otherwise potentially Infectious Material (OPIM)
- Body fluids, secretions incl. saliva, and excretions (except sweat), whether or not they contain blood
- Non-intact (broken) skin
- Mucous membranes
Elements of Standard Precautions

- Hand washing
- Use of gloves, masks, eye protection, and gowns
- Disinfection of patient care equipment
- Disinfection of environmental surfaces. Alternatively, cover what you can
- Injury prevention
Bloodborne Pathogens
**Bloodborne Pathogens**

**HIV**
- Lifetime infection
- No vaccine, no cure

**HCV**
- Symptoms and transmission risk factors similar to HBV
- Untreated-chronic infection and #1 reason for liver transplant
- No vaccine

**HBV**
- Jaundice
- Risk factors: Sharps and needlesticks
- Chronic infection develops ~5% of the time, increasing risk for cirrhosis, liver cancer
- Environmental persistence on surfaces
- Vaccine available
Bloodborne Pathogens: HBV Vaccine

- Vaccine Efficacy >90%
- Now part of childhood schedule
- University policy to offer to students with potential occupational exposure
Bloodborne Pathogens: Occupational Exposure

- Refers to: ‘stick’ from any contaminated item; mucous membrane, non-intact skin exposure
- Clean with Betadine and antimicrobial soap
- Rinse eyes/mucous membranes 10 minutes
- Inform supervisory person
- All patients, students or faculty/staff injured in the clinical facility should file an "Accident Report - Qualtrics"
- Online submission
- Student Health - HIV, HBV, HCV response scenarios
- File University Accident Report
Bloodborne Pathogens: Post Exposure Evaluation

- Baseline HIV, HBV, HCV testing (titers/viral load)
- HIV Post exposure prophylaxis; anti-retroviral treatment may be indicated and is effective if given immediately (2 hour window) – REPORT IMMEDIATELY
- Source patient name and MRN# is helpful
- HBV Vaccination/Ig may be indicated
- HCV No post exposure prophylaxis; anti-viral treatment may be indicated for established infections
- Follow up testing
# Bloodborne Pathogens: Accident Reporting

## Departmental Accident Report Form

**for Workers’ Compensation Benefits**

### Employee Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td></td>
</tr>
<tr>
<td>First Name</td>
<td></td>
</tr>
<tr>
<td>Employee ID</td>
<td></td>
</tr>
<tr>
<td>Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Home Phone</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City, State, ZIP</td>
<td></td>
</tr>
<tr>
<td>Employment Date</td>
<td></td>
</tr>
<tr>
<td>CU Department</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>Work Phone</td>
<td></td>
</tr>
<tr>
<td>Wages per week</td>
<td></td>
</tr>
<tr>
<td>Days per week worked</td>
<td></td>
</tr>
<tr>
<td>Regular Days Off</td>
<td></td>
</tr>
</tbody>
</table>

### Accident Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of injury/illness</td>
<td></td>
</tr>
<tr>
<td>Time of injury/illness</td>
<td></td>
</tr>
<tr>
<td>Time you started work</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>What were you doing</td>
<td></td>
</tr>
<tr>
<td>How did the injury/illness occur?</td>
<td></td>
</tr>
<tr>
<td>Was the injury caused by a sharp object?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Describe the object or substance</td>
<td></td>
</tr>
<tr>
<td>Describe the injury/illness—indicate type of injury, specify left or right, and so on</td>
<td></td>
</tr>
</tbody>
</table>

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**Columbia University Human Resources**

**Biosafety**

[www.ehs.columbia.edu](http://www.ehs.columbia.edu)
Sharps Safety
Sharps Safety
Regulated Medical Waste Management

- Properly labeled containment to prevent injuries and leakage
- Red bag waste
- Sharps waste
- Medical wastes are "treated" in accordance with state and local EPA regulations
- Processes for regulated waste include autoclaving and incineration

![Image of SHARPS]

![Regulated Medical Waste Disposal Guide]

- SHARPS
  - Place all sharp objects such as endodontic files, irrigation syringes, needles, orthodontic wires, empty anesthetic capsules, sutures, scalpel blades, broken glass, etchings, sealants, composite syringes, dental burs, or any item that has the potential for causing percutaneous exposure in sharps container.
  - *No Soft Debris, *No Chemical Waste

- NON-SHARPS
  - Dispose of all other potentially hazardous non-sharp waste (e.g., any visibly soiled or blood stained disposables such as gauze or gloves) in red bags.
  - *No Sharps, *No Chemical Waste

- TRASH
  - Refuse free of visible contamination (i.e., non blood stained disposables), free of patient information, and presenting no other hazards should be disposed of in regular, clear garbage bags.
  - *Not in Red Bags or Sharps Containers

- AMALGAM WASTE
  - Dispose of all dental amalgam capsules into the exempt scrap metal container.
  - *Not in Red Bags, Sharps Containers, or Garbage Bags

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Environmental Health and Safety
Red Bag Bins Are Not a Place to Store….

- Coats
- Bags
- Dental trays
- Anything!
What Goes in Here?

No food or drink permitted in the clinic
Categories of Environmental Surfaces

- Clinical contact surfaces
  - High potential for direct contamination from spray or spatter or by contact with DHCP’s gloved hand

- Housekeeping surfaces
  - Do not come into contact with patients or devices
  - Limited risk of disease transmission
Environmental Surfaces: Clinical Contact Surfaces
Environmental Surfaces: Housekeeping Surfaces
If bed bugs or bites are apparent, talk discreetly to your patient about them, as you would with any other medical issue.

PPE and terminal cleaning procedure should be adequate to control transmission of bed bugs.

When to ask for help? If you suspect bed bugs may be present your clinic or office should call the facilities help desk. Facilities will send a contracted exterminator over to lay glue traps. If bed bugs are evident, chemical extermination will be performed.
Spills

- Small blood spills on clinical contact surfaces can be cleaned up by CODM staff/students
- Cleaning materials and PPE are available in the clinics  
  - Gloves, paper towels, bleach
- When to ask for help?  
  - Spills on housekeeping surfaces, large spills, aspiration system failure
Spills

Columbia University Health Care  Approval: Clinical Care Committee  Section on Environmental Health and Safety

Columbia University College of Dental Medicine  Date:  Reviewed: March 2013  Reviewed: March 2014  Page: 34

• TITLE: Biological Spills

• POLICY: This policy identifies responsibility and procedures for cleaning biological spills such as blood and saliva.

• PURPOSE: To ensure that biological spills are cleaned and disinfected promptly as an infection control measure. This policy is in agreement with the Columbia University Policy – Biological Spills; Response and Clean-up (see REFERENCES).

• RESPONSIBILITIES:

1. Clinicians are generally responsible for cleaning up biological spills that contact their equipment (e.g., dental chairs) and work surfaces. Facilities are generally responsible for cleaning up biological spills that are on the floor. Clinicians should call Facilities for service (212-305-4357). Facilities will then reach out to EH&S if a consultation on clean-up procedures is warranted. Departments are encouraged to contact Facilities to establish specific agreements regarding the scope of spill clean-up services.

2. Facilities are generally responsible for cleaning up biological spills that are in common areas, for example, on the hallway floor or in a bathroom. EH&S is available to consult on clean-up procedures and will assume responsibility for the spill if it is large.

PROCEDURE:

1. Materials for clean-up should be assembled in one place, and personnel should
Personal Protective Equipment (PPE)
Personal Protective Equipment (PPE)

- Disposable gowns should also be changed daily or when they become visibly soiled; They can be disposed of in normal (non-red bag) waste
- Gowns are either front or rear-opening; NOT reversible
- Surgical masks and protective eyewear (providers and patients) must be worn at all times when splatter, splash or aerosol producing procedures are being performed, or observations of procedures are being made
PPE is to be removed when leaving patient care areas.
Personal Protective Equipment (PPE): Gloves

- Minimize the **two-way transmission** of microorganisms between patients and providers
- Reduce contamination of the hands of health care personnel by microbial flora that can be transmitted from one patient to another
- **Are not a substitute for hand washing or sanitizing**
Special Hand Hygiene Considerations

- When removing gloves, no glove is 100% effective
- Change ASAP after visible contamination
- ‘Purell’ or soap and water?
- Technique is important
TB Transmission in Dentistry
Transmission of *Mycobacterium Tuberculosis*

- Spread by droplet nuclei
- Immune system usually prevents spread
- Latent infection: Bacteria can remain alive in the lungs for many years (not transmissible)
TB Transmission in Dentistry: Risk

- Risk in dental settings is low
- Only one documented case of transmission
- Tuberculin skin test conversions among DHCP are rare
TB Transmission in Dentistry: Prevention

- Baseline medical surveillance of DHCP (PPD/quantiferon)
- Assess patients for history of TB
- Defer elective dental treatment
- If patient must be treated:
  - DHCP should wear a respirator
  - Isolation; separate patient from others/mask
  - Refer to facility with proper TB infection control precautions
Questions?